4.16 HUMAN HEALTH AND SAFETY

This section provides an evaluation of the public health issues associated with the proposed landfill. Issues typically considered important to human health and safety associated with a landfill include vectors, (i.e., bacteria and disease-carrying rodents, birds, and insects); inadvertent disposal of household hazardous waste; air pollution from dust-emitting operations, landfill gas migration, toxic air pollutants associated with landfill operations; and groundwater contamination from leachate migration. Air emissions and odors from the landfill are discussed in Section 4.7, Air Quality and Air Toxics Health Risk, and potential groundwater contamination is discussed in Section 4.3, Hydrogeology. Vectors and other related nuisances such as litter, dust, household hazardous wastes, and a review of the rules and regulations applicable to the protection of public safety associated with municipal solid waste landfills are discussed. In addition, because the project would require relocation of the existing transmission lines crossing the landfill site, issues related to electromagnetic fields (EMFs) are also addressed.

4.16.1 EXISTING SETTING

4.16.1.1 Applicable Rules and Regulations

The proposed project must comply with applicable federal, state and local rules and regulations for the design, construction and operation of municipal solid waste landfills. Generally, the U.S. Environmental Protection Agency (EPA) Guidelines for State Solid Waste Management Plans (40 CFR 256) requires states to enforce solid waste disposal standards that are equivalent to or more stringent than federal standards, and to have the capability to detect adverse environmental impacts related to solid waste disposal. The federal regulations are found in Titles 29 and 40 of the Code of Federal Regulations (CFR). The state regulations are found in Public Resources Code (PRC), Division 30 and California Code of Regulations (CCR) Titles 14 and 27. The San Diego County Department of Environmental Health (DEH) is responsible for the enforcement of these regulations as they pertain to solid waste issues.

4.16.1.2 Household Hazardous Waste Element

The County of San Diego prepared a Household Hazardous Waste Element (HHWE) in 1992 to comply with California AB 939 requirements. According to the HHWE, approximately 6,360 tons of household hazardous waste (HHW) are generated in San Diego County each year (County of San Diego 1992). The HHWE for San Diego County specifies how each city or unincorporated area in the County will safely collect, recycle, treat, and dispose of HHW generated by households in the County.

Since 1985, DEH had administered a joint San Diego Regional Household Hazardous Materials Program (Program) between the County of San Diego and the City of San Diego. Beginning in July 1998, local cities chose to administer their own HHW programs. DEH still administers the program for the unincorporated areas of the County. One of the initial goals of the Program was to prevent disposal of HHW in all solid waste landfills in San Diego. Substantial progress has been achieved toward accomplishing the Joint Program's two primary goals which include:

- Educate the residents of San Diego County on which materials may become HHW and on the hazards and risks associated with the use, storage, and improper disposal of HHW. Educational objectives include encouraging residents to: a) reduce the use of hazardous

products by the use of safer substitutes and prudent purchasing, and b) recycle or properly dispose of those products that have been purchased and are no longer needed.

- Provide appropriate and convenient disposal opportunities for HHW for all San Diego County residents. Safe disposal alternatives have included the use of regional collection events (operated by jurisdictions on an "as-needed" basis), drop-off services at a permanent facility and a local treatment, storage or disposal (TSD) facility, and home pick-up services.

The second goal has been changed to apply only to residents of unincorporated areas of San Diego County. In order to comply with AB 939, the HHWE for the County incorporates additional alternative component objectives to expand the County-specific program with the ultimate goal of eliminating the generation of HHW and its illegal disposal. Existing program components include collection, disposal and treatment, recycling, reuse, source reduction and public education. Collection events are currently operated by jurisdictions on an as-needed basis, and there currently is no treatment, storage, and disposal facility in San Diego County.

There are currently eight permanent Household Hazardous Waste Collection Facilities operating throughout the County. A jurisdiction may establish and operate a facility and accept household hazardous waste from residents of another jurisdiction through a use agreement. Table 4.16-1 provides the existing and proposed household and hazardous waste collection facilities and includes the location, operator, and jurisdiction served. In addition, a permanent household waste collection facility is proposed for the City of Chula Vista.[1]

4.16.1.3 Electromagnetic Fields (EMFs)

Definition of Electromagnetic Fields

Electric and magnetic fields are created by electric charges. Charges with opposite signs, positive and negative, attract each other and charges with the same signs repel each other. These forces, if stationary, create electric fields, the strength of which is related to the voltage or electric pressure in the transmitting circuit. When the forces are in motion, they create magnetic fields. The strength of the magnetic field is proportional to the amount of current in the circuit. The strength of electric and magnetic fields drops off very quickly as a receptor moves further away from the source of the fields. They are associated with a very wide range of energy frequencies referred to as the electromagnetic spectrum. EMFs can be generated by virtually any source of electricity, including high voltage, long distance electricity transmission lines; distribution and service wires in electricity distribution systems; wiring in homes and buildings; ground currents in water pipes; and appliances such as computers, radios and televisions.

Issues Concerning EMFs

Substantial discussion has been generated regarding the potential health effects of exposure to EMFs. Of particular interest are 60-Hertz electric and magnetic fields. Hertz is defined as a unit of frequency (of wave forms associated with EMFs) equal to one cycle per second. Much of the current research in the area of EMFs is focused on potential impacts associated with the magnetic fields.

[1] Personal Communication with Karilyn Merlos, Department of Environmental Health, LEA Division, October 26, 2000.

TABLE 4.16-1
EXISTING AND PROPOSED HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITIES IN SAN DIEGO COUNTY

	FACILITY	OPERATOR	OTHER JURISDICTIONS SERVED
EXISTING	Coronado Located at Coronado Fire Department	City of Coronado	Chula Vista, Imperial Beach and National City
	El Cajon	City of El Cajon	Santee
	La Mesa Located at EDCO Transfer Station (La Mesa)	City of La Mesa	N/A
	Poway Located at City of Poway Materials Handling Yard	RSWA [a]	Del Mar, Encinitas, Escondido, Imperial Beach, National City, San Marcos, Solana Beach and Vista, Unincorporated Areas
	San Diego Located at Miramar Landfill Recycling Center	City of San Diego	Unincorporated Areas (beginning September 2000)
	Vista Located at City of Vista Auxiliary Corporate Yard	RSWA [a]	Carlsbad, Del Mar, Encinitas, Escondido, National City, Oceanside, Poway, San Marcos, Solana Beach, Unincorporated Areas
	Oceanside Located at Waste Management Transfer Station	City of Oceanside	
	Ramona Located at Ramona Disposal Services Transfer Station	County of San Diego	Agreements may be negotiated based on cost per car
PROPOSED	Chula Vista Proposed site: City owned property on Maxwell Road—near Otay Landfill Estimated opening Fall of 2000	City of Chula Vista	Possibly South Bay cities—Imperial Beach, National City

[a] The Regional Solid Waste Association (RSWA) is a Joint Powers Authority comprised of the cities of Del Mar, Encinitas, Poway, National City, Solana Beach, and Vista.

Source: County Department of Environmental Health, 2000

Since 1979, some epidemiological studies conducted in community settings have reported weak associations between childhood cancer and some estimates of exposure to magnetic fields (power line proximity and type), but not with others (measured magnetic fields). Other epidemiological studies, equally well done, have reported no associations between proximity to power line sources of magnetic fields and cancer. Those reporting associations are not consistent with respect to cancer type. A universal deficiency in the epidemiological literature concerns exposure assessment. The ability of surrogate measures to predict power-frequency magnetic field exposures is quite limited. Improved methodology in recent studies has failed to show a commensurate strengthening of the evidence relating to health risks. In the occupational setting,

some studies have reported weak associations between work in electrical occupations and leukemia or brain cancer, but other studies have not.

Numerous internationally recognized scientific organizations and independent regulatory advisory groups have conducted scientific reviews of the EMF research literature.[2] It is their ability to bring together experts from a variety of disciplines that gives their reports the credibility and recognition they have received. Without exception, these major reviews have reported that the body of data, as large as it is, does not demonstrate that exposure to power-frequency magnetic fields causes cancer or other health risks, although the possibility cannot be dismissed. Most reviews recommend further research. The weakness of the reported associations, the lack of consistency, and the severe limitations in exposure assessment in the epidemiology studies, together with the lack of support from laboratory studies, were key considerations in the findings of the scientific reviews.

The National Academy of Sciences (NAS) conducted a comprehensive evaluation of research studies relating to EMF and published a report in 1997 which concluded that the body of evidence does not show that exposure to EMF presents a human health hazard.[3] A report from the National Institute of Environmental Health Sciences (NIEHS) concluded that exposure to low-frequency EMFs may slightly increase the risk of childhood leukemia.[4] Both of these studies found the evidence of risk from EMF to be weak. The NIEHS study concludes that "[t]he lack of consistent, positive findings in animal or mechanistic studies weakens the belief that this association is actually due to ELF-EMF [extremely low frequency electric and magnetic fields], but it cannot completely discount the epidemiological findings. The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard." Research continues and the scientific community has not reached consensus on this issue.

Existing Transmission Lines

The Escondido-Talega electrical transmission corridor currently contains both 230,000 volt (230kV) and 69,000 volt (69kV) electrical transmission lines on common structures within a 300-foot wide easement that crosses the site in a north-south direction on the lower slopes of Gregory Mountain (Exhibit 4.5-1). The transmission lines are owned and maintained by San Diego Gas and Electric (SDG&E). Access to the transmission lines is maintained by SDG&E

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[2] American Cancer Society, 1996, American Conference of Governmental Industrial Hygienists, 1991; American Physical Society, 1995; American Medical Association, 1995; California Public Utilities Commission/California Department of Health Services, 1989; Committee on Interagency Radiation Research and Policy Coordination, 1991; Connecticut Academy of Science and Engineering, 1992; Danish Ministry of Health, 1993, 1994; Department of Energy, Ireland, 1992; EPA Science Advisory Board, 1992; Health Council of the Netherlands, 1992; Illinois Department of Public Health, 1992; International Non-ionizing Radiation Committee of the International Radiation Protection Association, 1990; National Institute of Health and Medical Research, France, 1993; National Radiological Protection Board, 1994; National Radiological Protection Board, United Kingdom, 1992, 1994; National Research Council, 1996; Oak Ridge Associated Universities, 1992; Texas Public Utilities Commission, 1992; Universities Consortium on Electromagnetic Fields, 1992, 1994; Virginia Department of Health, 1996.

[3] National Academy of Sciences (NAS). Possible health effects of exposure to residential electric and magnetic fields. January 1997.

[4] "NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields." NIEHS EMF-Rapid Program staff. NIH Publication No. 99-4493.

along unimproved dirt roads within the easement. The existing easement alignment transverses the proposed Gregory Canyon Landfill footprint. As is typical for this type of easement, land uses in the easement area are restricted to ensure that utility personnel can access the towers for maintenance and for public safety reasons. Generally, no structures can be located in these easements.

4.16.2 POTENTIAL IMPACTS

In accordance with CEQA Guidelines (Appendix G), the project would create a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the transport, use, production, or disposal of hazardous materials; or
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Interfere with emergency response plans or emergency evacuation plans.

The extent of impacts on public health and safety caused by the proposed project is related to the degree with which the following can be controlled: landfill gas, leachate generation and migration, the illicit disposal of prohibited materials, vectors, fire hazards, site security and employee and user safety.

4.16.2.1 Short-Term (Construction) Impacts

Rockfalls

Rockfalls are abrupt movements of independent rock blocks detached from steep slopes. Falling rocks can reach the base of a slope by free-falling, bouncing, rolling down the slope surface, or by some combination of the above. The east flank of the canyon is dotted with numerous boulders that could be potentially unstable under seismic shaking or blasting vibration. Erosion near the base of the boulders during rapid runoff could also undermine support of the boulders. Rockfalls could create a safety risk to workers and equipment, and could also damage the liner system and leachate collection system, the landfill gas control system, or the final cover of the landfill. As discussed in Section 4.2, Soils and Geology, a qualified geologist will assess rockfall hazards prior to blasting. If a boulder appears to be insecure, landfill personnel will attempt to dislodge it using pry bars and if necessary using equipment to pull the boulder down into the footprint area. Please see Chapter 3 and Section 4.2 for a more detailed description. The controlled removal of insecure boulders would ensure that rockfalls would not create a safety risk to workers and equipment, or to the landfill development. No significant effects resulting from rockfalls would occur.

Employee and User Safety

Short-term impacts related to worker health and safety may arise from the operation of heavy equipment and machinery. Since such impacts may occur during the construction and operation phase of the project, effects related to employee and user safety are addressed under Section 4.16.2.2, Long-Term (Operational) Impacts.

4.16.2.2 Long-Term (Operational) Impacts

Landfill Gas Migration

Landfill gas is produced by the anaerobic decomposition of the organic matter in solid waste, and typically contains 40 to 50 percent methane (CH_4) gas. The methane component of landfill gas is explosive when it reaches a 5 to 15 percent range of concentration in the air. As methane is produced within landfill cells, internal pressure moves the gas along the paths of least resistance. If it is not contained, and if suitable subsurface geologic conditions exist, methane could migrate off-site and represent a safety hazard (because of its explosive potential) to surrounding land uses.

A landfill gas collection system will be installed at the site (Section 3.5). The system will meet the requirements of Title 27, Article 6, Gas Monitoring and Control at Active and Closed Disposal Sites. The disposal area will be lined with a composite liner system (bottom and side slopes) with a vertical gas well and/or horizontal trench collection system. Migration probes will be installed along the boundary of the landfill footprint to monitor for the subsurface migration of landfill gas (Exhibit 3-3). Probes will be monitored during the operation of the landfill and as part of the post-closure environmental monitoring maintenance activities. Engineering safeguards will be supplemented by maintenance of a minimum distance of 1,000 feet between refuse fill and habitable structures. With implementation of monitoring mitigations and engineering safeguards, no significant impact related to landfill gas migration are anticipated.

Water Quality Protection

Water quality protection will be an integral part of the environmental control systems at Gregory Canyon Landfill. Engineered containment and control systems will consist of composite liners, subsurface barriers, monitoring and extraction wells, and desilting basins, protecting both groundwater and surface water quality. Potential impacts related to water quality and proposed water quality protection systems are further discussed in Section 4.3, Hydrogeology; and in Section 4.4, Surface Hydrology.

Household Hazardous Waste

Although hazardous wastes will not be accepted at the proposed Gregory Canyon Landfill, some household hazardous materials may be inadvertently brought to the landfill. Household hazardous waste (HHW), which result from products purchased by the general public for household use include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or serious illness or pose a hazard to human health or the environment. These wastes may include cleaners, pesticides, paint products, automotive products, hobby products, and other toxic substances commonly found in households. In addition, HHW may include infectious wastes, such as syringes or other material contaminated with etiologic (i.e., disease-causing) agents.

Hazardous Waste Exclusion Program

The project includes a Hazardous Waste Exclusion Program (HWEP) to comply with the state regulations under 27 CCR, Sections 20220 and 20870. These regulations state that “Owners or operators of all Municipal Solid Waste Landfill (MSWLF) units must implement a program at

the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in 40 CFR Part 261 and polychlorinated biphenyl (PCB) wastes as defined in 40 CFR Part 761."

The purpose of the HWEP will be to discover and discourage attempts to dispose of hazardous or other unacceptable wastes, including PCBs, at the landfill. The Gregory Canyon Landfill will only accept municipal solid wastes and inert construction debris. Liquid wastes, burning materials, infectious wastes, radioactive wastes and hazardous wastes are considered unacceptable wastes and will not be accepted at the landfill facility. A gamma-scintillation counter installed at the scale facility will screen for low levels of radioactive waste (see detailed discussion below). As required in Proposition C, trained, full-time personnel will be assigned exclusively to continuously inspect incoming refuse loads for unacceptable waste. These personnel will be stationed at the working face of the landfill whenever the landfill is open to accept waste and will inspect loads as they are tipped. The handling of hazardous waste found on site is discussed below.

During implementation of the HWEP, non-residential customers will receive notices in the mail that contain the following general information:

- Hazardous wastes and certain other types of wastes (to be described in the notice) are not accepted at the Gregory Canyon Landfill and may not be placed in refuse containers.
- A random load-checking program is in effect at the disposal site for detecting hazardous and other unacceptable wastes.
- If hazardous or other unacceptable wastes are delivered to the Gregory Canyon Landfill, the waste hauler will be billed for the removal and disposal of such wastes in permitted hazardous waste treatment and disposal facilities.
- There are federal and state penalties for the improper disposal of hazardous and certain other types of wastes.

Radioactive Materials Detection:

To guard against radioactive materials entering the site, a gamma-scintillation counter capable of detecting the presence of very low levels of radioactive waste will be installed at the scale facility. All vehicles entering the landfill will be screened for radioactive materials as they pass through the scalehouse area. An alarm will sound if radioactive emissions are detected. Suspect loads will be pulled aside and re-scanned to ensure interference did not cause a false alarm. If a load appears to contain radioactive material, the suspect load will be taken to an isolated area of the site and the operator would make a direct call to 911. The load will be searched until the radioactive material is located or it is determined that the load is free of such material. The incident commander who responded to the 911 call would set the protocols for the removal and disposal of the material, if any were found. Most likely a licensed contractor would be called to the site to haul the material away to an approved disposal site. DEH will determine any subsequent enforcement action.

Random Load Checking Program:

In addition to monitoring of incoming loads, a key element in the HWEP for the Gregory Canyon Landfill is a random load checking program. The loadcheck program will evaluate all waste that is prohibited by the WDRs and the SWFP. Landfill site management will designate and train a member of the landfill staff who will be responsible for conducting the random load checking at the site. Back-up personnel will also be trained. The staff member(s) will perform a detailed

examination of one randomly-selected load each week. The objective of the load checking program is to augment on-going monitoring performed at the active landfill face in detecting and discouraging attempts to dispose of hazardous wastes at the site. All observations and information will be recorded on a data sheet. All completed data sheets will be delivered to the landfill manager prior to the completion of the working day in which they are completed. The information gathered will be recorded in a daily HWEP Report.

If hazardous or other unacceptable wastes are identified they will be returned to the driver, unless they are in such a condition as to make return to the driver impossible or unsafe. If it is possible and safe to return the waste to the driver and the driver refuses to take the waste, the California Highway Patrol (CHP) will be notified. In the event that the waste cannot be returned to the driver, it will be handled according to the procedures described below in *Procedures for Handling Hazardous Wastes*. The party responsible for transporting the wastes to the landfill will be notified that the wastes were illegally deposited at the site and will be charged for the disposal costs incurred, or will be given the option of contracting with an acceptable hazardous waste hauler to conduct the clean-up. All such incidents will be reported to the California Regional Water Quality Control Board (RWQCB) and the Department of Environmental Health (DEH) Hazardous Materials Management Division.

Procedures for Handling Hazardous Wastes:

If unacceptable waste is found in a load prior to the vehicle entering the facility, entrance to the site will be refused and the driver will be informed to dispose of the waste at a permitted hazardous waste facility. Any vehicle suspected of carrying unacceptable materials will be directed to an inspection area where a detailed visual inspection of the vehicle contents will be performed by the operations staff. Approved vehicles will be directed to the active landfill area for disposal.

All hazardous materials will be removed immediately if observed during unloading and returned to the customer or appropriately stored. If hazardous wastes and the hauler associated with the hazardous waste are identified, the hauler is responsible for the cleanup of any spill. Any hazardous materials that need to be retained on site will be stored in the designated hazardous waste storage area shown on Exhibit 3-8. This area will have secondary containment and approved storage containers, which are safe and convenient for storing identified wastes.

If hazardous or other unacceptable wastes are detected on site, Gregory Canyon Landfill site personnel will immediately cordon off the designated area from the general public and site personnel not involved in the incident. If it is possible and safe to transport the material, it will be taken to the Hazardous Waste Storage Area in the southeast corner of the facilities area (Exhibit 3-8). In the event of a hazardous materials spill, the hazardous material will be separated from surrounding materials and placed in secure containers. The containers will then be transported to the Hazardous Waste Storage Area. If the spill is larger than landfill personnel can contain, facility management will notify the Hazardous Incident Response Team (HIRT), a joint powers authority (JPA) entity administered by the City of San Diego and the County Department of Environmental Health. The generator of the hazardous waste is responsible for cleanup and if the generator cannot be identified, then the landfill operator is responsible. The wastes will be transported by a licensed hazardous waste hauler for disposal at a permitted hazardous waste treatment and disposal facility. The incident and response will be recorded in the site records and reported to the LEA.

If unacceptable materials are suspected or identified at any location, these materials will be isolated and the supervisor notified for further examination and identification. The supervisor will attempt to identify the character, exact source, amount and extent of the waste by observation. The inspector may notify a certified laboratory to obtain and analyze samples to determine if the waste is hazardous. Waste which must be disposed off-site will be moved to the secured hazardous waste storage area in the ancillary facilities area. The area will be a fenced, asphalt pad surrounded by a curb. Storage will be in proper storage containers which are fireproof, provide double containment, and have a California hazardous waste label. Storage facilities will be divided so as to provide separate storage for incompatible chemicals. Hazardous materials will remain in the containers in which they entered the site. Materials will be overpacked and manifested with a licensed hazardous waste disposer for removal, transport and disposal at a permitted hazardous waste facility in compliance with all federal, state and local regulations.

On site hazardous waste storage will be limited to 90 days or as required by applicable state laws and regulations prior to being transported to a permitted treatment, storage and disposal facility. The "Accumulation Start Date" on the California hazardous waste label of each overpack drum containing hazardous waste will be monitored on a regular basis. Prior to shipment off site all materials will be overpacked and manifested with a licensed hazardous waste hauler/disposer.

Records of individual vehicles and loads will be utilized to identify the party responsible for dumping any wastes determined to be hazardous. The landfill operator will seek reimbursement from identifiable responsible parties for all response actions initiated, such as contracting with a licensed hazardous waste disposer for proper removal of the waste. If the dumping is deemed intentional or if the responsible party refuses to pay for the response actions, the County of San Diego, Department of Environmental Health, Hazardous Materials Division will be contacted. If necessary, the incident may be reported to the District Attorney for possible prosecution. If no responsible party can be identified, the landfill operator will retain full responsibility for the management and disposal of the waste.

The supervisor will prepare a record of each instance where a response action was initiated. The record will include the following information and be retained in the landfill operator's file for at least three years:

1. Date and time waste was discovered;
2. Type and quantity of materials involved, including any laboratory reports; and
3. Estimated quantity and disposition of waste materials removed and copies of hazardous waste manifests.

Signs: Signs will be posted near the site entrance that clearly state the types of acceptable and unacceptable wastes.

Observations by Site Personnel: Site personnel will also be trained and directed to identify potentially harmful wastes that may be delivered to the site. These personnel include supervisory personnel (managers, engineers, superintendents, foremen), fee collectors, traffic directors and equipment operators. The equipment operators and traffic directors will play a particularly valuable role in observing wastes as they are deposited in the facility.

Known Offenders: Special caution will be taken when accepting wastes from sources that have previously attempted to deliver hazardous wastes to the site. Precautionary measures will include: (1) questioning of the vehicle driver by the gate attendant concerning the contents of the

load; (2) visual inspection of the load prior to discharging, when feasible; (3) additional record keeping at the weigh station regarding the delivery of wastes from such sources; and (4) additional efforts by site personnel at the facility to observe the wastes discharged from such sources. Repeat offenders will be banned from the site.

Provided that the Proposed HWEP is fully implemented and enforced as discussed above, the amount of prohibited materials entering the proposed landfill is expected to be minimal and therefore, no significant impacts in relation to the illegal disposal of prohibited materials are anticipated. In addition, the establishment of Permanent Household Hazardous Waste Collection Facilities throughout San Diego County will help to further reduce the disposal of household hazardous wastes into the landfill.

Vectors

A vector is an organism capable of carrying, transmitting or causing disease or disrupting the normal enjoyment of life by adversely affecting public health and well-being. Vectors generally associated with waste disposal include rodents, flies, mosquitoes, and birds. Due to the nature of the project (i.e., the handling and disposal of solid waste), there is a potential impact due to vectors if proper operating and control procedures are not used. State and federal standards for landfill operation specify several requirements intended to minimize attraction and support of vectors, including proper grading designed to minimize water ponding and mosquito propagation, and daily cover/compaction to control, birds, rodents and fly propagation. Compliance with these mandated standards and procedures are expected to minimize public health issues associated with vectors.

The Vector and Bird Measures Control, as described in Chapter 3 of this document, will be provided to the Vector Surveillance and Control Division of the DEH for review and approval. The approved plan and bird control policy will be implemented for the proposed Gregory Canyon Landfill. Under the proposed vector control plan, all waste materials which are brought to the site will be covered daily with soil or an alternative daily cover as discussed in Chapter 3.0, Project Description. Items used at the facility which could attract vectors will be stored in closed containers and/or within enclosed structures. In addition, buildings, the landfill active face, and perimeter areas will be inspected monthly for signs of vectors. Building openings, ground holes and deficiencies in the perimeter fence will be repaired to deter the intrusion of ground vectors.

Effective control of mosquitoes will be achieved through proper grading of interim fill surfaces and final fill slopes, and eliminating puddles and wet areas at the landfill. On-site stormwater basins will be constructed to the State of California Best Management Practices (BMP) guidelines so as to be self-draining within 72 hours. In areas of poor soil percolation, basins will be equipped with a sub-drain system. Basin design will include planned access for required cleaning and maintenance. In addition, insect nuisances and propagation at the landfill will be controlled by the daily compaction and covering of waste. All building gutters and drains will be designed to eliminate the ponding of water and possible habitat for mosquitoes.

A number of bird species, particularly gulls, crows, vultures and blackbirds frequent sanitary landfills because landfills provide an easy, dependable source of food. Bird problems will be controlled and prevented at the proposed site by making the landfill facility less attractive to birds for feeding, roosting and resting. The primary bird control method will be the application of sufficient daily cover material.

Since the project applicant will enforce vector control measures and bird abatement measures as part of the landfill operations, no significant public health impacts are expected to occur with respect to vectors.

Fire Hazards

The proposed landfill is located in a State Responsibility Area (SRA) and fire protection is provided by the California Department of Forestry and Fire Protection (CDF) Rincon Fire Station CDF has jurisdictional authority and is responsible for enforcing fire control requirements in the wildlands. Permanent structures are subject to the state Uniform Building Code and Uniform Fire Code (as adopted by the County of San Diego). The San Diego County Department of Planning and Land Use (DPLU) Building Department is responsible for enforcing the fire control requirements of the state Uniform Codes.

Fire can be caused at the landfill when landfill gas, tires, combustible refuse, vegetation, or litter along the access road become ignited by any of the following sources: the tipping of a hot or smoldering load (containing hot embers such as charcoal briquettes or fire ashes); sparks from vehicles or machinery hot exhausts, mufflers, or brakes; or lighted cigarettes or matches thrown from vehicles. On-site storage of petroleum products (i.e., diesel fuel) in the maintenance area represents another potential fire hazard. In addition, most sanitary landfills have the potential of subsurface combustion of buried refuse. Such fires can be triggered by burial of "hot loads" with other refuse material, or uncontrolled or improper operation of the landfill gas control system. Subsurface fires can result in accelerated or potentially sudden local settlement in the vicinity of a fire, and venting of smoke or combustion byproducts through the landfill cover. Also, fires started in other areas of the site can spread and be a threat to landfill patrons and employees. Dry slopes in the vicinity of the site are covered with combustible vegetation, including chaparral and coastal sage scrub. Summer and autumn seasons are especially critical periods because of reduced soil moisture.

No burning of refuse will be allowed at the proposed landfill facility, which minimizes the chance of above ground fires. In addition, a firebreak will be provided around the landfill footprint. The firebreak will exist between the refuse and the undisturbed natural areas surrounding the landfill. In compliance with the requirement to maintain a minimum clearance of 150 feet from the periphery of any exposed flammable solid waste (California Public Resources Code Section 4373), refuse placed within 150 feet of the landfill perimeter will be placed using the following procedures:

- Clearance of brush and vegetative debris from around the active disposal area
- As operations move into the 150-foot zone, the operator will place soil cover regularly throughout the day
- At no time during operational hours will refuse be exposed for more than four hours

The potential for subsurface fires at the project site will be controlled by the daily monitoring of the landfill gas control system. The use of daily cover (either soil or an appropriate alternate) will minimize the potential for subsurface fires. If a subsurface fire occurs, additional cover will be used. Temporary monitoring to assess subsurface conditions will be done to ensure that the fire is contained and out.

If an incoming refuse truck is carrying a smoldering load, the vehicle will be directed to an isolated area where the material will be dumped and extinguished with water. A 5,000-gallon water truck will be permanently located on-site for dust control purposes, and, therefore, will be

available to quickly apply water to smoldering loads upon detection. The truck will have fire hose connections. In addition, a 20,000-gallon water tank, also equipped with fire hose connections, will be located adjacent to the ancillary facilities area (Exhibit 3-8).

In the event of an above-surface fire at the landfill, dozers will be used to cover exposed fires, and scrapers will transport cover soil to the fire area. As a secondary measure, on-site water trucks will be dispatched to the fire area to begin fire control. (The on-site water tank (Exhibit 3-8) will be used to fill water trucks.) The use of water in fire suppression is limited to avoid the introduction of liquids into the waste prism. Should these on-site fire suppression methods require additional support, CDF will be immediately alerted.

Additional on-site fire prevention equipment include the use of fire extinguishers for putting out small fires. Fire extinguishers will be installed on equipment and vehicles on-site. "No Smoking" signs will be posted at fuel tanks and near the scale area of the landfill.

Tire Processing and Disposal Hazards

Waste tires accepted on the site will be stored within the landfill footprint in accordance with the County's 1994 Uniform Fire Code, Section 1103.3.6, Outside Storage of Tires, as well as Title 14, Section 17354 of CCR. Tires will be shredded a minimum of once every six months in the southwestern portion of the footprint with the use of a portable shredder. This time period is intended to prevent the threat of potential fire hazards associated with tire storage, as well as the collection of standing water, runoff, and vectors.

In accordance with the regulations the tire storage area will maintain the following parameters:

- Not exceed 5,000 square feet of contiguous area;
- Not exceed 50,000 cubic feet in volume;
- Be less than 10 feet in height;
- Be located more than 20 feet from any property line or perimeter fencing; and
- Be separated from vegetation and other potentially flammable materials by no less than 40 feet.

Currently, the state is pursuing the development of new standards regarding waste tire storage.[5] The landfill operator will be required to comply with any new regulations that are adopted.

There are differences between the proposed tire storage and processing at the project site and facilities in Northern California where large fires recently erupted. The Filbin Tire Pile located in northern California, for example, has stored waste tires since the 1950s. The tire piles are estimated to contain 6.9 million tires, approximately 60 feet deep.[6] The amount of tires stored on-site will be far less than those stored at Filbin, and tires will be stored for a maximum of six months. Once every six months, tires will be shredded and the tire pieces will be landfilled.

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[5] Telephone communication with Todd Fullhammer, Associate Waste Management Engineer and Tom Micka, Associate Waste Management Engineer, California Integrated Waste Management Board, October 27, 1999.

[6] "Lightning Sparks Tire Fire." Waste News 4 Oct. 1999.

"Tire Fire Casts Worrisome Pall in Central Valley Town." Los Angeles Times 1 Oct. 1999: A.32.

"Calif. Board Reads Riot Act To Owner of Huge Tire Dump." Rubber Beat 27 Sept. 1999.

"Tire Fire Spews Hazardous Smoke." Los Angeles Times 23 Sept. 1999: A.31.

Potential impacts related to fire and vector hazards may be encountered with tire-processing and disposal procedures. All landfill employees responsible for handling waste tires will be trained in all applicable federal, state, and local regulations. Additionally, all tire-processing equipment will be equipped with lockout systems. Lockout-systems are designed to protect employees from the accidental release of energy. A lockout is a padlock placed on a power source with a lockout device that physically holds an energy control point (such as a switch, lever, or valve handle) in the "off" position, making it impossible to operate. If tires do catch fire, the first line of defense is to cover the tires with soil. The use of water in fire suppression will be limited.

Since the project applicant has incorporated fire-control measures and lockout systems as part of the landfill operations, no significant public health impacts related to fire hazards are anticipated.

Site Security

Safety impacts may arise if unauthorized users are provided access to the project site. Unauthorized users may potentially injure themselves if allowed on-site in restricted or otherwise employee-designated areas. To prevent potential safety impacts, entry to the proposed Gregory Canyon Landfill during business hours will be controlled by site personnel at the entrance facility which is the single point of public access to the site. The landfill will operate six days a week, Monday through Saturday, except holidays, for a total of 307 days per year. Visitors to the site will be required to check-in at the administrative office. Security at the proposed landfill will be provided by topographical constraints, six- to eight-foot high fencing (where required), and lockable entrance gates at the point of public access. Because portions of the landfill's boundary are particularly rugged and not easily accessible, fencing will not be necessary in all areas.

The scale houses and offices will be equipped with alarm systems. Unauthorized access will not be permitted at any time. Violators face suspension of disposal privileges, as well as other legal actions. With the implementation of site security measures, impacts related to site security are expected to be less than significant.

General Disposal Operation Hazards

Safety impacts at the site may potentially arise from the operation of heavy equipment and collection trucks and from exposure to objects and materials contained in waste. Mechanics who service or clean equipment may also come in contact with waste attached to the tracks on heavy equipment or in the processing equipment at the proposed landfill facility. Potential types of impacts that may result from waste contact are infection by microorganisms present in putrescent waste or physical injury from materials in the waste, such as glass or nails. Therefore, employee and customer safety is important to the overall operation of the site.

Gregory Canyon Landfill employees will be trained in health and safety procedures and preventative controls. Training and safety procedures are regulated by OSHA Final Standard 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.[7] Training will include: site safety, first aid, accident prevention, hazardous waste recognition, and emergency measures related to hazardous waste exposure. Appropriate safety equipment, such as dust masks, ear plugs, goggles, gloves, and orange safety vests, will be provided to landfill employees. First aid supplies will be provided in an accessible location. Self-contained emergency eye wash stations

[7] Telephone communication with Michele Stress, Department of Environmental Health, LEA Division October 22, 1999.

and showers having attached water reservoirs will be provided. Communication equipment will be provided between operations areas, the office, the scale houses, and any necessary emergency responders (police, fire, etc.).

The potential for hazards exists from customers and employees illegally scavenging material in the presence of heavy equipment and trucks unloading waste. Hazards to customers may also result from the uncontrolled mixing of light refuse trucks, which require unloading by hand, and heavy refuse trucks, which have poor driver visibility. Both employees and customers may potentially be exposed to risks from uncontrolled traffic at the tipping floor or the landfill working face.

Implementation of specific control measures will reduce the risk of uncontrolled traffic and scavenging. Traffic directors will control access to the working face of the landfill. Small vehicles and "hand unloads" will be directed to a separate disposal area, away from the large, automatic dumping refuse trucks, ensuring orderly and safe disposal operations. Due to safety considerations, scavenging will be prohibited. Employees will face disciplinary action and possible termination if caught scavenging, and customers will face losing their disposal privileges. Traffic rules on the entire site will be strictly enforced by site personnel.

Since the project applicant has incorporated and will enforce employee and user safety controls as part of the landfill operations, no significant public health impacts are anticipated.

Potential Nuisance Impacts

Litter

Operation of a sanitary landfill can result in the presence of litter in and around the site. Moderate and especially high winds can distribute lightweight refuse, such as paper and plastic, over quite a large area. Two sources of litter have the potential to result from the operation of the proposed landfill. Litter can escape from the trucks as waste is brought into the landfill site, and litter can be blown off the working face of the landfill during the waste spreading process, before compaction and daily cover applications Prevailing winds during the day blow up the canyon from the northwest. Santa Ana winds common in late fall can change this pattern.

In order to minimize the potential for a litter problem, a litter control program is proposed as part of the project. The following litter control measures will be implemented to reduce the potential for litter at the project site:

- Maintain a small working face and orient the daily working face to provide protection from prevailing winds;
- Cover refuse as soon as practical;
- Use portable, temporary fencing to control windblown papers; and
- Require that all loads be tarped prior to entering the landfill.

As required in Section 5 of Proposition C, at least five days each week a clean up team, consisting of one truck with a minimum two-person crew, will inspect for and clean up all litter and illegal dumping on or adjacent to the access road and SR 76 between I-15 and the site. In addition to the requirements of Proposition C, the Litter Control Measures require that litter inspection be done every day the landfill is open to accept refuse and that litter will be cleaned up on the sixth day as determined necessary by the inspectors.

Under the litter control program, disposal operations will cease when sustained winds of 40 miles per hour or greater, or gusts of 55 miles per hour or greater are expected to persist for one hour or longer. Operations are proposed to resume at the discretion of the landfill site manager. With proper implementation of the litter control program discussed above, the proposed landfill will not create a significant litter problem in the area.

Dust

The operation of a landfill requires a considerable amount of earthwork and the constant use of several types of vehicles on unpaved roads, which can result in the creation of fugitive dust. Dust generation for the proposed landfill will primarily occur within the limits of the landfill footprint and soil borrow/stockpile areas from cover soil placement, refuse truck traffic, soil excavation, and stockpiling, and other site maintenance operations. The permanent access road to the landfill will be paved not only to reduce repair and maintenance, but to avoid dust problems. The access road will be swept regularly and watered at least twice daily. Occasionally, dust may impact adjacent properties when soil is excavated and/or placed in the proposed stockpile areas.

To minimize fugitive dust from dusty loads (such as construction and demolition debris), covering or tarping dusty loads will be required. Uncovered dusty loads may be refused or charged a fine. Dusty loads will be watered as soon as possible to reduce fugitive dust generation during tipping. Trucks bringing construction materials to the site, as well as trucks hauling excess rock material off-site, will be tarped to reduce dust.

Dust raised from truck traffic will be controlled by wetting the internal haul roads with water or commercially available compounds (i.e., magnesium chloride) or a combination of the two, as prescribed by on-site operations capabilities and requirements. The Air Pollution Control District (APCD) requires landfill operators to water frequently enough to prevent visible dust. Since the access road to the landfill will be paved and dust suppression measures, such as water spray application to unpaved roads will be implemented, no significant impacts would occur with respect to dust.

In addition, the Dust Control Measures described in Chapter 3 require the revegetation of disturbed arrears that will not be disturbed for extended periods. A native vegetative cover will be planted and maintained on completed fill and excavation slopes. For a further discussion of fugitive dust generation impacts see Section 4.7, Air Quality.

Risk of Upset/Emergency Preparedness

The proven methods of waste handling and sanitary landfilling to be employed, the installation and operation of state-of-the-art environmental control systems, and the monitoring of these systems would make the chances of a significant failure or upset at the Gregory Canyon Landfill extremely remote. As part of the proposed project and prior to its implementation, an Emergency Response Preparedness Plan will be developed.

The Emergency Response Preparedness Plan will identify occurrences related to the operation and maintenance of the landfill, which may potentially endanger public health and safety, as well as the environment. The plan will also establish actions whereby the effects of these potential hazards could be eliminated or minimized. The Emergency Response Preparedness Plan will identify an emergency coordinator(s) and an emergency notification list, identify the responsibilities of the emergency coordinator, and define specific action plans and equipment

available in the event of an upset or failure of an environmental control system. No significant impacts related to risk of upset or emergency preparedness are anticipated.

Electromagnetic Fields

Implementation of the proposed project will require relocation of the existing transmission corridor and transmission lines to the eastern border of the landfill footprint. Any potential exposure of EMFs to landfill workers will be brief and intermittent. On-site exposures will likely be reduced since the proposed grading plan would result in less work directly beneath the lines.

There are no off-site receptors in the vicinity of the landfill that would be exposed to elevated electric or magnetic fields resulting from the relocation of the power lines farther up slope on Gregory Mountain. The area adjacent to the eastern border of the landfill is undeveloped. Relocation of the existing transmission lines would not expose sensitive receptors to added or increased electromagnetic impacts than currently generated from existing lines. In addition, no increased potential interference with radio and television reception over existing conditions would occur. No adverse effects from electric and magnetic fields as a result of the project are anticipated.

It is recognized that some public concern and scientific uncertainty exist regarding a possible health risk from exposure to magnetic fields. As a precautionary measure, the California Public Utilities Commission (CPUC) in a November 2, 1993 decision (CPUC Decision 93-11-013), directed development of EMF Design Guidelines. SDG&E's "EMF Design Guidelines for Transmission, Distribution, and Substation Facilities" describe engineering techniques for reducing exposure to magnetic fields created by SDG&E's electric facilities. Pursuant to the CPUC decision, it is now SDG&E company policy to apply its guidelines to all electrical projects except minor maintenance and emergency repairs. SDG&E intends to conduct EMF studies to confirm that it should implement reasonable and low-cost techniques that would reduce the magnitude of magnetic fields created by SDG&E facilities.

Studies conducted to date by utilities, regulatory agencies, universities, and medical institutes to determine the potential health effects of EMF contain conflicting information and are largely inconclusive in their findings. Due to the inconsistencies of these results, those in the scientific community agree that more research is needed. To this end, additional studies to identify any potential health effects associated with EMFs on humans are ongoing by numerous public and private agencies and organizations, including the State Department of Health Services (DHS) and the CPUC. The identification of any potential impacts associated with EMF related to the implementation of the proposed project is considered speculative (Guidelines 15145). As noted by the court in Laurel Heights Improvement Association vs. Regents of the University of California (1988) Cal. 3d 276, "...no purpose can be served by requiring an EIR to engage in sheer speculation as to future environmental consequences." However, based on current EMF studies that do not establish health impacts from electromagnetic fields and the fact that potential exposure to EMFs to landfill workers will be brief and intermittent, no significant impacts from EMFs are anticipated.

4.16.2.3 Site Closure Impacts

No significant impacts to human health and safety are expected to result with landfill closure. Landfill gas monitoring and leachate monitoring and extraction wells will continue to function for a minimum of 30 years following the closure of the landfill. These engineering and

containment systems will ensure protection of water quality and surface water, thus no significant impacts are anticipated.

Additionally, hazardous materials and/or flammable materials will be removed from the landfill site and transported to an appropriate disposal facility. Removal of hazardous and/or flammable material will comply will all applicable local, state and federal standards. The post-closure land use of the project site would be open space. No significant impacts are anticipated.

4.16.2.4 First San Diego Aqueduct Relocation Option

While no significant impacts to the aqueduct have been identified, there is a perception that the landfill and the aqueduct might adversely impact each other. There will be no significant effects on the aqueduct from vectors, dust, hazardous waste or EMFs. Refer to Section 4.3, Hydrogeology, and Section 4.4, Surface Hydrology, for a discussion of potential impacts on the landfill of a rupture of the aqueduct. No public health and safety impacts would occur from the relocation of the aqueduct.

4.16.3 MITIGATION MEASURES AND PROJECT DESIGN FEATURES

Proposition C

Section 5C, 5D, and 5F of Proposition C contain the following mitigation measure relative to potential public health and safety impacts:

MM 4.16.C5C *At least five (5) days each week, the Applicant shall inspect for, and clean up, all litter and illegal dumping which occurs on, or adjacent to, the landfill access road and that portion of Highway 76 between the intersection with Interstate 15 and the site. The clean up team shall consist of at least one truck with a minimum crew of two persons.*

MM 4.16.C5D *The Applicant shall maintain trained, full-time personnel engaged exclusively and continuously in the inspection of incoming refuse loads for hazardous waste. These personnel shall be stationed at the working face of the landfill whenever the landfill is open to accept waste and shall inspect loads as they are tipped. Hazardous wastes encountered in this fashion shall be handled and disposed of in accordance with state regulations.*

MM 4.16.C5F *The Project shall include a network of vertical extraction wells, lateral transmission pipes to a gas recovery facility, and perimeter gas monitoring probes. With this system, the landfill gas will be extracted from the landfill and combusted in an enclosed flare.*

Project Design Features

The project includes the following features:

- A Hazardous Waste Exclusion Program (HWEP) which will be implemented to discover and discourage attempts to dispose of hazardous or other unacceptable wastes at the landfill; the HWEP shall be in addition to MM 4.15.C5D.

- Tire storage will be within the landfill footprint in compliance with the County's 1994 Uniform Fire Code, Section 1103.3.6, Outside Storage of Tires, as well as Title 14, Section 17354 of CCR.
- Vector and Bird Control Measures (described in Chapter 3) will be provided to the Vector Surveillance and Control Division of the DEH for review and approval, which include:
  - Daily compaction and application of daily cover will occur.
  - Materials that attract vectors will be stored in closed containers and/or enclosed structures.
  - Repairs of building openings, ground holes and deficiencies in perimeter fencing will be performed to deter intrusion of ground vectors.
  - Proper grading/drainage to eliminate puddles and wet areas will be performed.
  - The desilting basins will be self draining within 72 hours, and will be regularly cleaned out.
  - Tire shredding will occur at a minimum of every six months.
  - Other deterrents for vectors will include the playback of distress vocalizations, falcon kites, owl decoys, dispersal by humans and/or dogs.
  - The use of conventional slap-traps and anticoagulant rodenticide will be employed.
  - The use of professional pest control services will occur.
- Litter control measures (described in Chapter 3) will be implemented to minimize the potential for a litter problem within the project site; the litter control program shall be in addition to MM 4.16.C5C, which include:
  - Compaction and application of daily cover will occur.
  - Temporary fencing around active disposal area will be provided.
  - The use of tarps on commercial vehicles will be required.
  - At least five days each week a clean up team, consisting of one truck with a minimum two-person crew, will inspect for and clean up all litter and illegal dumping on or adjacent to the access road and SR 76 between I-15 and the project site. A litter inspection will be performed every day the landfill is open to accept refuse and litter will be cleaned up on the sixth day as determined necessary by the inspectors.
- Dust Control Measures (described in Chapter 3) will be implemented to reduce the impacts from dust (also see Section 4.7, Air Quality and Air Toxics Health Risk).

Impacts and Mitigation Measures

Specific mitigation measures related to rockfalls, landfill gas migration, water quality, and air quality are discussed in Sections 4.2, Geology and Soils, 4.3, Hydrogeology, 4.4, Surface Hydrology, and 4.7, Air Quality and Health Risks, respectively.

4.16.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the implementation of the measures in Section 4.16.3, no short- or long-term impacts on public health or safety are anticipated with project implementation. State-of-the-art environmental control and protection systems, hazardous waste inspection programs, and employee training and site safety programs would reduce all potential impacts on public health and safety to a less-than-significant level.